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ABSTRACT

Teams working in distributed projects go through the same stages and encounter the same problems as typical face-to-face teams. The main difference when the environment is moved to a distributed setting is that some problems become more complex, other problems become less noticeable, and some new obstacles occur. One of the main problems with distributed work is getting to know each other and building trust, but there are other, more practical issues that also need to be dealt with when people are working together at a distance. This paper presents a set of guidelines developed from research with various distributed project based courses. Guidelines include: synchronize the teams; choose technology that works; choose the right technology for the right activity; discuss norms and rules for behavior and communication; discuss and carefully plan any face-to-face visits; have team building and social activities; and think proactively. The conclusion is that students are not conscious of the difficulties of distributed communication and collaboration, and they need guidance in resolving and avoiding common problems. (Author/AEF)

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Facing the Unknown: Distributed Project Team Guidelines 2B

ED 479 556

Abstract

Teams working in distributed projects go through the same stages and encounter the same problems as typical face-to-face teams. The main difference when the environment is moved to a distributed setting is that some problems become more complex, other problems become less noticeable, and some new obstacles occur. One of the main problems with distributed work is getting to know each other and build trust. But there are other, more practical issues that also need to be dealt with when you are working together at a distance. In this article we present a set of guidelines developed from research with various distributed project based courses. Our conclusions are that students are not conscious of the difficulties of distributed communication and collaboration. They need guidance in resolving and avoiding common problems.

Background

We have conducted research in three different graduate courses, on five occasions, from 1999- 2001. The courses were held at Stanford University (USA) and KTH (Sweden), and in some cases with involvement from NUS (Singapore) and TMIT (Japan). The participant have mainly been engineering students, but there were a few business students in one of the courses. The students participated in globally distributed projects and collaborated by using ICT.

The research was conducted by observing teamwork, meetings, classes, etc., by conducting focus groups and interviews with faculty, students, and other people involved with the courses, through formal written surveys, and through an analysis of student papers about lessons learned during the collaborations.

It is normally easier to work together if you are co-located and see each other face-to-face regularly. Nardi and Whittaker (in press) argue that face-to-face communication will persist not only because it provides rich information, but also because it is the surest way to establish and nurture the human relationships that underlie business relationships. The relationships are grounded in social bonding and expressions of commitment that are most easily accomplished through face-to-face communication.

Cheesman and Heilesen (1999) point out that a real life meeting is hard to replace with photos, CVs, home pages and the like. All of the examples that they give are static ways of giving information about yourself, though, and do not really give any opportunities for team members to interact. Synchronous activities that involve virtual interactions may have richer results, although they may never fully replace in-person meetings. And even if pictures and biographies do not replace face-to-face interactions, they can still be valuable for helping teammates get to know each other better.

In the case of distributed team work, in-person meetings may not be possible, due to limited budgets or time. Problems arise due to the confusions that come from not seeing, knowing, and/ or trusting distant project participants. However, with simple means it should be possible to decrease some of the most common problems and make distributed teamwork easier to handle. It is interesting to consider whether it possible to work together without meeting at all. How might a team better handle working in projects at a distance? What concerns should be addressed, and what are the most important differences and difficulties that need to be solved?

Some researchers have their doubts about whether distributed teams will ever reach the same level of collaboration as face-to-face teams, that collaboration requires collective action, and such action is unlikely in virtual teams. Knoll and Jarvenpaa conducted a study with students in distributed teams without any face-to-face interaction. They found that a majority of the teams took collective action

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and that distance collaboration without face-to-face meetings can not only work, but can also be very successful. It just takes some extra effort to get it started.

One of our initial research interests was to examine whether it was possible to work together in a project at a distance without meeting at all. However, all teams that were observed eventually choose to meet in person. All teams emphasized the huge improvement the face-to-face meeting had on their project work. Interestingly, none of the teams put any real effort into trying to get to know each other and make the collaboration work before meeting. Thus from this research, while we show further evidence that face-to-face meetings make distributed teamwork easier, we are not able to prove whether there are other ways to achieve the same goals.

Even though meeting face-to-face helped the teams work together, they still had problems. Many of these problems could have been solved before they met. Simply discussing the specific difficulties that accompany distributed work at the outset, would have made collaboration much easier. We therefore gathered some concrete distributed team suggestions, to help the students become more aware of the problems they might encounter, avoid some of them, and help them know how to get started in this new situation.

The problems we found might seem obvious and easily solved, but our research has shown that they are often not initially observed or understood by team participants. The interesting thing is that these problems seem to recur and were noticeable in all the teams observed. None of the problems are impossible to avoid and they are easier to overcome if considered and discussed early in a project. We therefore believe that the following suggestions can be of use for distributed teams in general.

Even if you set up norms, rules, and guidelines, it doesn't necessarily mean that you have improved the collaboration. Knoll and Jarvenpaa conducted two studies where the students in one study were explicitly told to set process rules and in the other they weren't, but the students set up norms and rules to the same extent in both studies. The studies also showed how important the setting of the rules were. "When teams did not realize they had to evolve a way of working together that was amenable to all, too much time was spent on process issues disguised as content issues." To make any guidelines useful, you have to make sure they are presented in a way that is adapted to the experience and knowledge of the participants. There should also be some follow-up after presenting the guidelines to ensure they are understood and applied throughout the project. In our research, we found that students often were so immersed in details of project content, that organizational and process concerns were neglected. We propose the following guidelines to enhance virtual team collaboration.

Guidelines for Distributed Project Teams

Synchronize the Teams

Distributed team members coming from different universities probably have different schedules, requirements, and deadlines that will affect the team work. When you are working, make sure the other members of your team know what you are planning on doing, when your holidays are, your local course deadlines (if you are not part of the same course), etc., so fewer misunderstandings will occur. It is important to try to synchronize the work as much as possible, but if you can't do that, you will at least know why. Particularly, if there are multiple faculty and/ or courses involved, the faculty should, as a first step, try to synchronize the courses and their objectives. Faculty should then inform everybody involved about the differences that still exist. The students should also synchronize their particular activities.

Choose Technology That Works

Use the most stable technology possible for communication with your distributed teammates. If the technology is experimental, always have a backup plan. This is especially important if you are in a synchronous situation, like video conferencing. Make sure you have the phone number of a contact person that is usable during the time of the conference. Establish who will be reachable over email (and at what address) during the meeting. Be on time (so it is clear whether you don't have communication because of

failing technology or because people are late) and set a time (e.g. 15 minutes after the conference start time) to give up or start using some other technology.

Choose the Right Technology for the Right Activity

Think about when to use what kind of media. For example, email may not be the best medium for decision-making, since it is slow and asynchronous. Email may be useful for file-sharing, updates, (light-weight) discussion, personal information, questions, planning, and briefings. Video or telephone conferences may be useful for decision making, clarifications, confirming email discussions, updates, allocations of work, and planning. These examples may or may not hold true for your team. As a team you should discuss when you will use chat, file sharing systems, web forum, telephone, videoconferencing, email, etc., and for what activities.

Discuss Norms and Rules for Behavior and Communication

You can expect that there will be conflicts, sooner or later, in your collaboration. By discussing how to deal with the problems before they actually occur, you can avoid a lot of conflicts, and establish ways to address those that do arise. You might state norms, or informally discuss expectations for behavior. This is important regarding the content of the communication, handling for example gender, personality types, cultural issues, humor, etc. Knoll and Jarvenpaa mentioned that the need to structure and making things clear is important in all teams, but absolutely necessary in a distributed team, since students don't see what their teammates are doing and can't solve the problems as they come up.

It is also important to decide how to use the different media. For example how late you can call, how and in what formats you should send files, and how many emails you can send per day without creating information overload or flooded mailboxes. You might also consider rotating roles for group meetings, such as facilitator, agenda planner, recorder, etc. This works well also because it spreads the responsibility throughout the team, which makes everybody feel more involved. Rotating roles also keeps one talkative person from monopolizing the conversation. Also try to avoid slang and talking too fast if you have non-native speaking members in your team.

Discuss and Carefully Plan any Face-to-Face Visits

Before you get to see each other face-to-face, you should discuss what the purposes are for the meeting and what you should have done by the time of the meeting, to get the most out of it. If you meet early in the collaboration you have the advantage of getting to know each other faster and therefore have the possibility to get more out of the collaboration at an early stage. If you wait until you have done some background reading, have suggestions of possible approaches or solutions, and know more what you are talking about, you have a higher chance to get more out of the collaboration in the face-to-face meeting, and you will make a better impression. The fact that the participants normally get motivation and energy out of a site visit should also be considered when you decide if you should have a face-to-face visit, and, if so, the time and place for the meeting.

Have Team Building and Social Activities

For the collaboration to be as smooth as possible, it will help if you get to know each other as well as possible. This will help you know what to expect from the other members of the team, to learn about special skills of different team members, and to be able to have fun working together. It is advisable to have some form of personal presentation in the beginning of the collaboration. This can be done for example by making a short video about yourself, your team and your campus; by making a web page where you introduce yourself; and/ or by presenting each other at a video conference. Remember- a picture is worth a 1000 words, so try to use pictures in your presentations.

Duarte and Snyder point out that when you are planning teambuilding activities, it is important to take into consideration that it might be subject to cultural bias. Experienced virtual team members might think of the activities as a waste of time. This only makes it even more important to think

about choosing the right activity for the specific participants, environment, and project, and also to use the right activity in the right phase of the team development.

Think Proactively!

When you come to, especially the first, telephone or video conference, make sure you know what you want to get out of it. Make a list of what topics you want to cover, things that are uncertain and need to be clarified. Ask your distance teammates what they want to discuss and tell them what you want to get out of the meeting, so you can come to a mutual agreement. If possible, this should be shared before the meeting. Also remember, when you first start meeting, you can set the tone, and even if you have to remember that cultural and personality differences also play a big role in deciding how people will prefer communicating, being relaxed and positive yourself will help creating a good atmosphere.

Conclusions

Students working in distributed projects are facing challenges and problems they might not have encountered before, but the knowledge they can get out of this kind of work will be useful working in any line of business where you have work with or encounter other people. Just putting students in teams together with participants from different universities and countries without giving them any motivation or guidelines for the collaboration, will not give them the full advantage of the experience. Project work is in a lot of ways opportunity learning and without giving the students guidance to go in the right direction, the opportunities might only appear as problems, and the students will never get or feel the full advantage of the collaboration.

Our conclusions are that most students are not conscious of the difficulties of distributed communication and collaboration. They need guidance in resolving and avoiding common problems. Handing out simple guidelines and concrete suggestions can help the students avoid some of the worst pitfalls and put them on the right track earlier, and a small effort and careful thought can make a collaboration successful. The guidelines you find in this article point to problems that have recurred in all classes observed, and they provide a simple method to start helping distributed students get a better work situation and improve their learning situation.

It is important to synchronize members and sub-groups of a team as much as possible. For student teams, initial synchronization should be arranged by the faculty. The faculty should help the students continue to synchronize as the project proceeds. The choice of technology is very important when you are working at a distance, since most of the communication will be conducted via technology. Choose technology that works and is easy to use. It is important to choose the right technology for every specific activity. Discuss how you should use the different media and how to behave in different situations when using it. Since there are fewer natural ways of socializing when at a distance, make sure to have teambuilding and trust building activities. Discuss if, when, and why you should meet face-to-face. One of the most important things to create a good working and learning environment is to be proactive and work for the changes you want to see. Working at a distance can be very rewarding, but only in the context of active and thoughtful organization and synchronization of team activities.

Future work

Future research on distributed teams should explore methods for minimizing the need for meeting face-to-face. One method could be to compare teams that meet, with those that don't meet at all (but have a strategic plan for how to build trust and get to know each other at a distance). Such analysis could help both completely distributed teams, but also help teams that will meet occasionally, to get a better start. This would make it possible to observe what improvements teams have (if any) after discussing guidelines for behavior and distributed work, having teambuilding activities, etc.

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